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ABSTRACT

Intended primarily for use by instrumental music teachers who do not have a major concentration in strings, this guide provides pertinent basic resources, materials, teaching--learning expectation, and a general overall guide to achievement levels at various stages of development. Discussions are presented of Choosing the Proper Method Book, Teaching and Learning (beginning, intermediate, and advanced levels for violin, viola, cello, and bass), Resource Materials for Teachers (an annotated bibliography), and Instructional Materials for Teaching String Instruments (a bibliography). (CK)

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TEACHING STRING INSTRUMENTS

The University of the State of New York THE STATE EDUCATION DEPARTMENT
Bureau of Secondary Curriculum Development Albany, New York 12224

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TEACHING STRINGS

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FOREWORD

Teaching Strings is primarily intended for use by instrumental music teachers who do not have a major concentration in strings. In many cases instrumental teachers are expected to teach both band and orchestral instruments with only a personal specialization on a single instrument. It is the purpose of this guide to provide the instrumental generalist, and also assist the specialist with pertinent basic resources, materials, teaching-learning expectation, and a general overall guide to achievement levels at various stages of development.

A. Theodore Tellstrom, Chief, Bureau of Music Education, initiated the project and served as adviser throughout the preparation of this publication. John A. Quatraro, associate in music education, had responsibility for the project on behalf of the Bureau. The manuscript was written by Howard L. Koch, then instructor of strings, Bay Shore High School, now retired. J. Edward Sprenger, Jr., coordinator of strings instruction, Colonie Central School District, edited the final manuscript. Assistance in compiling the bibliography was provided by the following: violin, Harry Alshin, Scarsdale Public Schools; viola, Homer Garretson, State University College, Fredonia; cello, Seymour Benstock, Hofstra University; bass, the late Fred Zimmerman, New York Philharmonic Orchestra. Musical illustrations were prepared by Richard Laffin, a student at Bethlehem Central School.

Eugene J. Cunningham and Charles J. Trupia, associates in music education, reviewed the manuscript. Richard G. Decker, associate in secondary curriculum, coordinated the project and prepared the copy for reproduction.

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I. Introduction

The origin of string instruments is lost in the mist of antiquity. We have records of a crude string instrument played with a bow from as far back as 5,000 years ago. This was the ravanastron, an early Arabic instrument. The more immediate predecessors of the modern string family were the English crwth, the Arabian rebab, the viola de gamba, the vielle, and the organistrum. The earliest records of the violin as we know it today appear between 1500 and 1550. Several craftsmen were given the credit for the creation of the violin in its present shape. Probably all made some contribution to its evolution. History gives the following men the credit for building the first modern violin: Gaspar Duffopruggar, a Bavarian who became a French citizen and worked in France from 1515 to 1530; Gasparo Da Salo whose surname was Bertolotti, born in Salo in 1540 and died in Brescia in 1609, who is also given much credit as is Maggini of Brescia, 1540–1632. The violin was brought to perfection by the famous Amati family. The founder, Andrea Amati, lived in Cremona from ca. 1520 to ca. 1578. Antonio Stradivarius, a pupil of Nicolo Amati, Cremona, ca. 1640–1737, and another great master, Giuseppe Guarneri, Cremona, 1698–1744, left a legacy of superb string instruments which are the treasured prizes of our great artists and collectors of today. The astonishing fact about the violin is that no one has been able to improve on the essential design created by these masters. This is an amazing truth in the face of our modern improvements and studies in the field of acoustics and engineering.

Today we are experiencing a renaissance of string playing in terms of public interest and numbers of students. The importance of having orchestras in our schools is becoming more and more fully realized. Furthermore, one of the greatest attractions in studying a string instrument is the opportunity to participate in chamber music. Some of the best creative efforts of our great composers are found in their writing for small ensembles. The responsibility of our schools should be to maintain a balanced music program, including string instruction by qualified teachers. Many colleges now maintain string quartets in residence. These groups bring to whole communities the pleasures and rewards to be found in chamber music.

The opportunity for participation on a string instrument as both an avocation and a vocation is found far more frequently today than at any time in the past. The American Symphony League lists approximately 2,000 adult community and professional symphony orchestras in the United States. The modern symphony orchestra of today is capable of a great range of musical expression, offering the gamut of tonal colors and flexibility. The nucleus of this mighty instrument is the string choir, numbering two-thirds of the entire ensemble.

To ensure the future of these orchestras and small ensembles, serious attention is being given to improving the quality of string instructional procedures. Strings, played as they are with a bow, present instructional problems which differ from those encountered in teaching other instruments. There is perhaps a greater complexity of muscular skills involved here than on any other instrument.

The correct beginning steps in string instruction are of the greatest importance. Correct muscular habits from the beginning can lead to the joy and satisfaction of artistic attainment. Conversely, the crippling restraints of incorrect basic techniques can lead to frustration and early mortalities. Correct habits of posture, fingering, and bowing are most essential to continuance and higher achievement in string study. The elements of rhythm, intonation, dynamics, and general musicianship should receive attention at all levels of instruction.

Selection, Care, and Repair of the String Family

A prerequisite to successful teaching of strings is the proper choice of an instrument of suitable size and quality. If the beginning student is permitted to use an inferior or badly adjusted instrument, the handicap is so great that frustration and defeat are almost inevitable. The proper size is also of the greatest importance. The inexperienced teacher should seek help in his choice of instrument from a reliable dealer or enlist the assistance of an experienced teacher. The choice is such a vital one that it should not be made casually. The Resource Section lists several books and pamphlets which can offer assistance in this matter.

Criteria for Proper Size of String Instrument

The Violin

Place the instrument in playing position on the shoulder of the student. Have the student extend his left arm at full length under the violin. If the center of the palm of the hand cups the scroll comfort-

ably, this instrument is proper for the student. If the scroll falls short of reaching the palm of the hand, the violin is too small. Should the hand not reach the scroll, the violin is too large. Age of the pupil, therefore, is not the determining factor in choosing a violin of correct size. Rather, the size of the pupil is the primary consideration. Violins as small as 1/16 are used with tiny children 3 or 4 years of age. Most third- and fourth-grade children use 1/2- or 3/4-size violins and most fifth- and sixth-grade pupils use 3/4- or full-size violins.

The Viola

Use the same measurement employed in selecting the violin for the beginning violists who are using the small-size violas made for school use.

The Cello

The size of the cello is established by measuring the span of the left hand. If the span permits the comfortable stretch of the first and fourth fingers to encompass the interval of a major third (which is the extended position in the first position), this cello is the proper size. Students in the fourth and fifth grade usually use 1/2- to 3/4-size while those in the sixth grade and above use 3/4- to full-size cellos.

The String Bass

The instrument should be placed for the student at the proper playing position, with the end pin at a reasonable height. The first finger of the left hand is then placed one whole tone from the nut. This finger should be level with the eyes of the student. Another point to consider is that the bow should be easily placed at the correct position between the bridge and the fingerboard when the arm is held in a relaxed and straight position. Students in the elementary grades usually use the small junior-size basses or the 1/2-size. Junior high school and older students use the 1/2- to the 3/4-size. Very few full-size basses are used in the public schools. The instrument commonly referred to as a full-size bass is actually a 3/4-size instrument.

Proper Adjustment of Instruments

Even if the quality of the instrument is acceptable, the improper adjustment of the bridge and sound post, or poor quality of strings, could still spell defeat for progress in learning. It must be remembered that new string instruments usually arrive from Europe in a rough

state, needing the services of a specialist to fit a proper bridge, set the sound post, and supply a good set of strings. A reliable dealer will attend to these matters. However, if he does not, the teacher should be aware of these needs and insist that adjustments be made according to M.E.N.C. " Minimum Specifications."

Care and Repair of String Instruments

Once the teacher has made sure that the student has an instrument of good quality, properly adjusted, and equipped with good strings, his next responsibility is to keep it in playable condition. Here are some points to consider.

Purchase a good set of strings. It is false economy to buy cheap strings. They will not sound well even on a good instrument. For the beginner, metal strings are advisable for all the strings, using a tailpiece with built-in tuners or four attached tuners. Keep the strings wiped clean. Caked rosin hinders the free vibration of the strings. Rosin should also be wiped from the top of the instrument after each playing.

The proper position of the bridge is opposite the inside notches in the F holes. It should stand almost perpendicular to the top of the instrument with a slight degree of leaning toward the tailpiece. With many tunings there is a pull on the bridge which causes it to lean forward. If the bridge is not pulled back periodically it will warp and need to be replaced or straightened. The bridge should be checked with each tuning. The feet of the bridge should exactly fit the contour of the top of the instrument.

After a certain amount of twisting, pegs acquire a mirror-like surface, which causes them to slip. When this happens a commercial pegdope may be applied or the peg may be removed and sanded down with fine sandpaper. To avoid this slipping problem, the use of Caspari or other types of patented pegs is sometimes advisable for beginners.

Inspect the instrument from time to time for openings around the edges where the top and back are glued to the ribs. Also check for weather cracks in the top which occur with acute changes of temperature. Such cracks may be small but they will spread if not correctly repaired immediately. Any openings affect the tone quality of the instrument.

Should a tailpiece gut break on a violin, viola, or cello, it is recommended that it be replaced with the patented plastic tailpiece adjuster which is unbreakable and simple to put on. The tailpiece wire on a bass can be replaced with ⅛-inch steel cable and a cable clamp. Refer to M.E.N.C. " Minimum Specifications " for proper length.

All string instruments should be stored in a room where an even temperature can be maintained and where the air is not too dry.

String instruments have a tendency to crack when exposed to dry air. If a humidifier is not available, keep a pail of water in the storage room to keep the air moist. A patented humidifier in the form of a simple tube, the " Dampit," which is inserted in the F holes, may be purchased. This is available for all four of the string instruments. Be careful to keep the instrument away from excessive dry heat, such as registers, stoves, or hot air vents. Such exposure causes ungluing of joints and needless repairs. When storing string instruments, *do not* loosen strings or remove the bridge.

The Bow

The bow as we know it today is credited to François Tourte, Paris, 1747–1835. He was the first to discover that the best wood to use for fine bows was pernambuco, a rare wood found in South America. This discovery was made between 1775 and 1780. Other materials used in the manufacture of bows are brazilwood, fiber glass, and aluminum. The two most popular woods for bows are called brazilwood and pernambuco. For a time the aluminum bow was widely marketed, but the fiber glass bow seems to have taken its place in popularity. The new fiber glass bows are now available for all string instruments including both models of the bass bow, French and German. Synthetic material is also being used to replace the horsehair traditionally used for bows. Nylon and fiber glass seem to be the most satisfactory substitutes. Fiber glass bows have been welcomed for public school use because of their superior wearing qualities. They do not warp or break easily, and, since they are manufactured from a mold, their weight and balance are quite consistent. There are various qualities of fiber glass bows on the market, and the purchaser should exercise caution.

Selecting the Correct Size Violin or Viola Bow

It is important to have the beginner use the correct size bow. A bow that is too long or too short leads to bad bowing habits. The proper length may be established by the following test:

With the student holding the violin in position on the shoulder, the teacher aids the student in extending his arm at the extreme of the down bow stroke. If the bow is too short, it will slip off the string. If it is too long, a considerable section of the bow will extend beyond the end of the stroke. A substitute remedy could be to mark the end of the stroke by slipping over the stick one of the patented clips on the market for this purpose, or simply by marking the place with

chalk or tape and instructing the student that he is not to bow beyond this point.

Selecting the Correct Size Cello and Bass Bow

The same basic criteria may be used in determining the correct length of bow for bass and cello as was used for violin and viola. It is better to have the bow too long than too short. However, a young student should not be allowed to use a bow which is too heavy. A bow which is too heavy can cause tenseness and pinching in the bow hand which, of course, is to be avoided.

Checklist for Proper Bow Care

Keep the bow hair clean. Do not handle it with the fingers.

Loosen the hair after each use. This prevents warping if a wooden bow is being used.

Rosin the hair rather frequently but not too much at one time.

Have the bow rehaired on the average of once a year.

Should a hair break, clip it off with a knife or scissors. Do not *pull* it out completely since this will loosen the other hairs.

Tuning Procedures

Tuning the instrument is a difficult, yet important part of the beginner's training in attaining good intonation. Therefore, tuning should be taught at the outset of instruction. Since the young student finds it difficult to turn the pegs, it is advisable to equip the violin, viola, or cello with metal strings plus tailpiece adjusters. While the Caspari type pegs are good for the more experienced students, the tailpiece tuning adjusters are the easiest for the beginner to handle. The beginning bass student has no problem with pegs since the worm gear used on the scroll turns easily. The use of metal strings is recommended since they are easier to tune. It is taken for granted that the beginner will not tune perfectly at first. However, with repeated attempts the results will improve. Until a point of proficiency is reached, the teacher must give much needed assistance.

Tuning procedures begin by plucking the open A string and comparing it with a piano or pitch pipe A. The student is cautioned that he should also test by bowing since this produces the more accurate pitch. Later he learns to identify and tune to the sound of the perfect fifth — this for the violin, viola, and cello. The bass begin-

ner is aided in finding the A, third position on the D string, playing it is a harmonic with the fourth finger. He adjusts the D string from this. Retaining this fourth finger on the D, he touches the first finger in the third position on the A string playing the harmonic on that note. This should produce a unison with the fourth finger. The A string is adjusted until the unison is perfect. The same procedure is repeated on the remaining strings. Some teachers find it helpful to place some sort of marking tape on the fingerboard to assist the beginning student in finding the correct finger position. The student should also be instructed not to tune too loudly. The ear can detect the true pitch of the string much more accurately when it is bowed softly. It is generally best to pull a string *up* to pitch rather than to loosen it to attain the desired pitch.

II. Choosing the Proper Method Book

It is a responsibility of the teacher to choose the proper string method — one that is appropriate to his particular teaching situation. The first task is to survey the needs of the teaching assignment. Does it require teaching all the string instruments in one class, or does it permit teaching of small groups of the same instrument? The grouping chosen will be based on the school district's philosophy of music education and school district scheduling practices.

String methods are divided into two categories — homogeneous and heterogeneous. In the first category fall many of the old school methods which have a tendency to progress too fast for school class instruction. However, many excellent new methods have been published in the past decade. Much more attention has been given to large, readable notes and better illustrations. Many have given more directions about the use of rote devices prior to introducing reading skills as well as rote exercises to supplement reading. This recognizes the wide acceptance of rate instruction recently made popular by the Suzuki demonstrations. Today there is no lack of good methods from which to choose. Most are well printed, attractive in material, and well organized.

In choosing the heterogeneous method it is advisable to check the treatment of the cello and bass books. These instruments have unique needs apart from the violin and viola. Some methods are written with an appeal for very young people in mind. Others are more sophisticated. The appearance of the page is important. The pages should be uncluttered and notes well spaced. The diagrams and photographs should be clear. The language should be simple and understandable to the student. Some directions should be included for the care of the instrument. Desirable additions are pages for practice reports, teacher's grades, and lesson assignments. A list of musical terms and symbols should also be included.

Content should now be judged. The material should progress slowly and logically. It is wise to introduce only one problem at a time. The simple tunes used should be attractive to young students. At intervals there should be pages of review and drill on previously introduced problems. The progress of material should be such that the student has a sense of achievement in mastering each step.

Rhythms should be introduced logically with attention to their relation to bow skill. Bowing skills should also follow a logical pattern. Modern pedagogy favors starting with small strokes and advancing to long strokes. The older methods were the opposite of this. The various bow styles of legato, staccato, and slurring should be introduced in graded sequence. Modern pedagogy also favors starting on the finger patterns of the major scales beginning on the open strings. Simple scales and arpeggios should be part of the drill material. Some duets should also be included to start ensemble training.

It should be observed that no one method book is likely to contain materials that meet all the needs of a student without some supplementary material being added. This is particularly true after the first book of a method is completed. Additional material can be in the form of albums of simple pieces, duets, and simple exercise books.

When the usual sequence of methods is finished, choice of study material becomes more complicated. The choice now depends on the individual needs of the student. Selections are made from the standard literature of student concertos and sonatas, small pieces, and graded étude books. It is interesting to note that the leading string pedagogues of today, while they may vary in their approaches to beginning steps, are still in agreement in the use of the standard literature of concertos and études.

III. Teaching and Learning

Since the string player must create his own pitches, as does a singer, it would seem logical to state that only those with a naturally keen pitch sense should be allowed to begin string study. Granted, these are the preferred ones; they can be taught more easily and quickly. But what about those who have a lesser gift in hearing? Should they be totally rejected? If they are actually deaf, or cannot tell one pitch from another, the answer is yes. If it is a case of having a slow reaction to pitch perception, such students should be accepted under certain circumstances. These students need to have a strong desire to play the instrument and a willingness to work. The teacher needs to have the patience, time, and know-how to overcome the obstacle of less than perfect pitch perception.

Physically, the string applicant should have normally functioning, flexible arms and hands. Good coordination of bodily movement is a great help to the beginning student. Any stiffness in arm, wrist, or finger joints, either left or right, can seriously hamper technical development. How about left-handedness? No longer is this considered an obstacle. The teacher needs to be aware of the condition and simply devote extra attention to right-hand development. The fourth finger of the left hand normally should be long enough to extend jut beyond the top joint of the third finger.

Cello and bass applicants should have hands with a broad span across the root joints of the fingers. The cello and bass require more physical strength to play than the violin. Therefore, strong hands are an advantage but not entirely a necessity, as the needed strength can be developed through proper practice.

It is a good plan to discuss the academic study record of the string applicant with his classroom teacher to learn characteristics of cooperativeness, alertness, and general attitude towards learning. The most generally accepted time to begin the study of violin, viola, and cello is in the third or fourth grade, although Suzuki has effectively demonstrated that even youngsters as early as 3 years of age can be taught. Pupils aspiring to be bass players should wait until their height and growth enable them to handle the instrument, whatever their grade level.

Beginning Level: Violin and Viola

It is said that the first 10 lessons are the most important ones a string player will ever receive. It is in these lessons that he learns to hold the instrument and the bow. If these fundamentals are properly taught, he is on his way to a satisfactory beginning.

If the approach is wrong and the student acquires muscular tensions and bad habits, he becomes a potential dropout. So important are these first steps that many teachers advise not permitting the student to take his instrument home until proper posture and bow hold have been established. It is when the student is away from proper supervision that he acquires bad habits in this early stage of instruction.

Holding the instrument correctly involves use of muscles rarely used before. In the first lessons the student is taught in a standing position, to have a relaxed stance with feet apart and to exercise the arms so that he can hold the violin in a relaxed but controlled manner between his collarbone and jaw (with some help from the left shoulder). It should be noted that the viola, due to its larger size, is usually held at a lower angle than the violin. Bow hold exercises should be given so that the wrist and fingers are flexible with a feeling of the bow being balanced rather than gripped. So complex is the number of muscles needed to be developed to hold the violin properly and to draw a good tone in the beginning that such pedagogues as Suzuki and Bornoff advocate a delay in introducing reading skills until good posture and bow control are well established. During this period, study is made interesting and progressive by means of rote-taught folk tunes, scales, and pattern exercises. Some teachers even begin instruction with a pizzicato approach to simplify physical involvement.

To set the posture of the left hand, so that the wrist is in a straight line with the arm and the fingers are arched over the strings, it is advisable to introduce the use of all four fingers as soon as possible. A good device, if used with discretion, is to place the fourth finger on one string and play a tune such as " Mary Had a Little Lamb " on the string below.

For detailed illustrations of left- and right-hand positions refer to Music Texts listed under Instructional Materials. Most beginners' methods contain good photographs of playing positions. It is possible to draw a musical sound from a string instrument from the outset. The student should be told that this is possible and also precisely how to achieve this. The student is induced to think good tone by

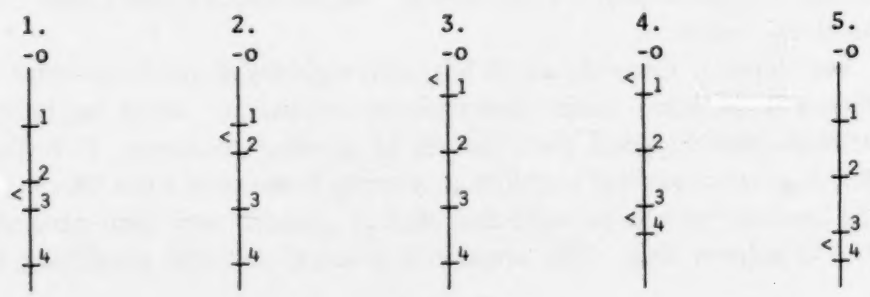
precept and example and to direct all of his efforts toward this end. The way to get a good sound is to reject all bad sounds! Such thinking and efforts place the beginner on the road to that most important of musical performance objectives — a resonant tone. Mechanically the production of a pure resonant tone on a string instrument depends on the following:

1. The proper grip of the rosined bow hair on the string, causing it to vibrate along its full length
2. The drawing of the bow at the proper distance from and parallel to the bridge. (The " proper " distance will vary with each individual instrument.)
3. The adjusted weight of the bow as it is drawn over the strings, growing heavier as the point of the bow is approached and lighter when moving towards the frog
4. The left hand also has a responsibility in producing a pure tone. This is achieved by having the fingertip firmly pressed on the string.

It is advisable to begin with short stop bows in the center and to develop this into larger strokes later. In the elementary level the student learns the following strokes:

1. Legato (Detaché)
2. Staccato (Martellé)
3. Slurred Staccato (or detached slurs)
4. Slurred Legato
5. A bounced bow near the frog

In the late 19th century, Otakar Sevcik inaugurated a system of introducing keys by " like finger patterns on all strings." Today this system is followed by most methods. The first pattern studied is the 2–3 half step, the pattern obtained when the open string is used to begin a major scale. A survey of modern method books shows a general agreement in introducing the patterns in the following order: (< indicates half step)



Knowledge of the above patterns enables the student to play in the keys of four sharps and four flats.

From the first lesson the student should be trained to listen for beauty of tone and accuracy of pitch. These are basic disciplines for every string player. If good tone is obtained by rejecting bad tone, it is equally true that good pitch is attained by censoring bad pitch! Good intonation is only attained by constant listening and careful adjustment.

While good intonation is a matter of constant listening, correct rhythm is a matter of constant attention to the feeling of pulse. This is best approached in the beginning by physical manifestations of pulse through clapping, foot tapping (with discretion), oral counting, chanting, or marching. All musical performance should be attended by a constant awareness of rhythmic context. Such rhythmic performance begins with the playing of open strings.

Both drill and melody are acknowledged necessities, but happy is the teacher who can combine both creatively, as Suzuki does in the " Variations on Twinkle, Twinkle," or who can make drill itself interesting and meaningful to the student. Folk tunes played by rote can be the starting point of making music for the beginner. When reading does begin, each little folk tune should be memorized. The growth of memory retention, from one-line tunes to one-page pieces and to complete concertos, is a logical development.

The beginner should have an elementary understanding of the following symbols of music:

Name of lines and spaces
The meaning of sharps and flats
Time signatures (meter signatures)
Key signatures
Basic bowing symbols
Various note values
Various rest symbols
The bar, double bar, and repeat symbols
Common Italian tempo marks: *allegro, andante,* etc.
Meaning of D.C., al fine, and D.S.

The beginner needs to understand the necessity of regular practice. His interest and incentive to work can be enhanced by having him participate in group solos and ensembles as early as possible. He should hear artist performances, either live or on recordings. Such

performances are a much needed inspiration for the beginner. The beginning level is a period which may be beset with frustrations. Controls have not developed as yet to enable the student to make the desirable musical sounds he wishes to produce. However, if he can be made to feel that he is advancing toward his goals, the incentive to continue will be there. The key to this motivation is a constant drive on the part of the teacher to help the beginner to develop a resonant tone as soon as possible.

Beginning Level: Cello and Bass

Although the fundamentals utilized in teaching violin and viola can be applied to the cello and bass, a few essential differences must be noted.

Special attention should be given to the proper height of the bridge and nut (especially) on the cello and bass. If these are too high it will seriously hamper the left hand in its efforts to press down hard enough to get a good tone.

While there are similarities in the playing of all string instruments, there are also certain differences which should be given special attention by teachers who are not performers on the cello and bass. Especially is this true in the holding of the cello bow and the French bass bow in comparison with the violin bow. The differences are:

1. The little fingertip should cover the pearl button on the side of the frog. For the violin bow, the little finger is on top of the bow.
2. The little finger is perpendicular to the bow, causing the second and third to be likewise, and the first finger is slightly curved. The knuckles of all fingers are above the stick. In violin bowing the fingers are slanted forward.
3. Cello and bass bows are tilted with the stick slightly toward the player. The opposite is true for violin and viola.

There are two types of bass bows: the German, Butler, or Dragonetti bow (larger frog), and the French or Bottesini bow (smaller frog). The French bow seems to have somewhat more popularity in use, perhaps because most string teachers are not bassists. However, many artists, including Gary Karr and the late Fred Zimmerman, prefer the German bow. Illustrative pictures of proper bow grips can be found in most elementary bass methods.

There are also differences in the left-hand techniques of violin-viola and cello-bass.

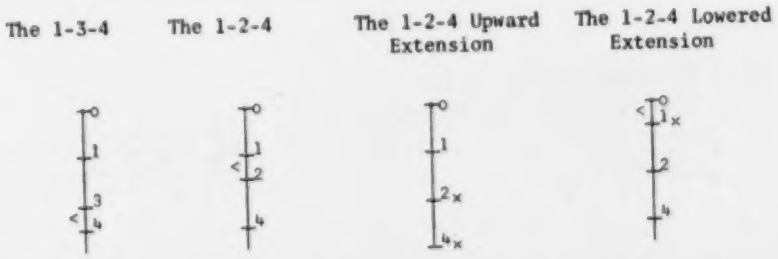
The thumb is placed on the cello and bass, under the neck of the instrument and opposite the second finger. The violin and viola players place the thumb at the side of the neck and opposite the first or second finger. The thumb should *not* be used as a pincer, but should be merely a guide for the rest of the hand.

Cello and bass players contact the string with a curved finger, as do violinists and violists, but play more on the fleshy part of the finger than do the violinist-violists.

Both the cello and bass students generally move into higher positions before the violinist does. The elementary student of cello and bass should cover the first four positions as well as the half position. Higher positions should be introduced only after a firm foundation is built in lower positions.

There is a difference in the finger patterns used on the various string instruments.

The cello uses these basic patterns up through the fourth position:



The bass player uses the following patterns through the fifth position:

Whole step	Half step	or	Half step
1–4	1–2		2–4

The third finger is generally not used in the first five positions.

Intermediate Level: Violin and Viola

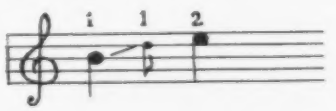
It is advisable to introduce some shifting by rote even before the student has finished the first position books. This is done to prevent "freezing" the hand in the first position, a liability when the student is permitted to play only in this position for 2 or 3 years. This approach was an established practice in the older methods. Modern methods apparently no longer subscribe to this procedure. It is a simple thing to mark the beginning of the third position on the fingerboard and introduce little folk tunes in this position by rote. Third

position scales beginning on the first finger, C, G, and D for violin and F, C, and G for the viola, may be taught with various bowings and rhythms. The student finds this excursion into the unknown a stimulating venture. While much time will be spent in the first part of the intermediate study level with learning the second and third positions, the positions from four to seven should be explored before this period has passed.

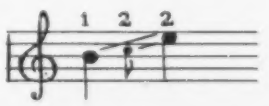
There are three types of shifting:

1. A single finger slides into a new position:

2. A single finger slides to a new position and another finger is placed:



3. The same as No. 2, but the slide is made on the new finger rather than on the starting finger:



The shift should be executed in such a manner that the sliding is unobtrusive. In shifting, the string instrument imitates the human voice. In singing intervals, the intervening notes are passed through quickly and are hardly heard. This is the effect that the string player seeks to imitate. A *slow* execution of the shift, with a resulting smearing or slurping sound, is to be avoided. There are times, however, when a certain amount of slide sound is acceptable and in good musical taste. When in doubt, one should ask the advice of a competent performer. To give the student the idea of the proper feeling in the hand during the shift, some teachers compare the swift movement to that of throwing a dart at a target. Another common fault to be avoided is caused by the anxiety of the student to move the shift quickly. He cuts short the note preceding the shift, upsetting his rhythm. Still another fault which inhibits good shifting is having pressure on the thumb and root joint of the first finger against the neck of the instrument. The resulting friction in the shift slows the movement. The hand must be relaxed during the shift with fingers being in control at all times.

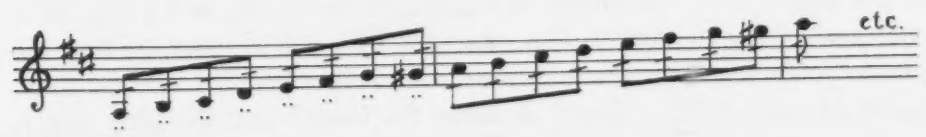
To attain this the student should practice silent exercises in which all four fingers are placed in the first position and then swiftly moved to the extreme top of the fingerboard and down again. Ease in shifting is an important skill in mastering the instrument and should be given much attention. Valuable literature to be studied for shifting development are Sevcik's Op. 1 and Op. 8, and also Gaylord Yost's " Exercises for Changing Position." The books of Sevcik are transcribed for viola.

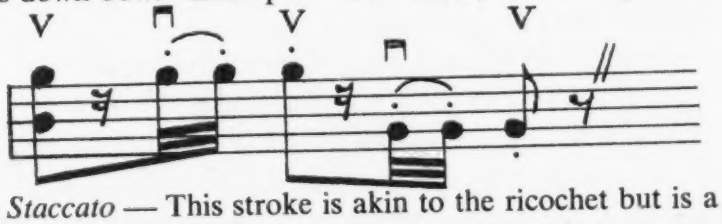
Bowing Skills

In the intermediate level, bowing skills are developed for more control, dexterity, and speed. The artistry of musical performance lies essentially in the mastery of the bow. An authority expressed it this way: " The bow is the *artist* and the left hand is the *artisan*." The control of the bow is a lifetime study for the string player. The height of achievement he attains as a performer is measured by the degree of skill he attains with the bow. Ysaye, the eminent virtuoso of the past generation, was once asked what was the most difficult task he had encountered in violin playing. He answered, " the first note in the ' Air on the G String ' by Bach." This extremely long note requires a maximum degree of control in order to sustain it with good quality. The mastery of the bow is the real challenge in string playing. It cannot receive too much attention.

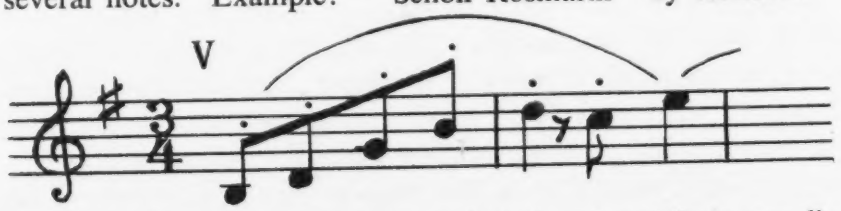
More advanced bow skills are introduced in the intermediate level. They are as follows:

Spiccato — A controlled bounce stroke played in the middle of the bow. Example of use, " Gavotte " by Gossec.

Sautille or *Saltando* — A very rapid small bow stroke executed in middle of the bow which causes the bow to bounce of its own resilience. Example of use, " Perpetual Motion " by Bohm.

Ricochet — The bow is thrown at the string, landing in the upper third of the stroke. Several very rapid notes are played as the bow rebounds down bow. Example: " Air Varié, No. 5 " by Dancla.

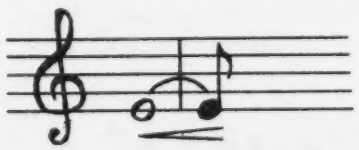


Thrown Staccato — This stroke is akin to the ricochet but is a slower stroke. The bow rebounds in one direction, either down or up, sounding several notes. Example: " Schön Rosmarin " by Kreisler.



Rapid Slurred Staccato — Staccato strokes played rapidly in one direction. Example: " Gavotte " by Gossec.

The Spun Stroke, Son Filé — A very long sustained stroke. Example, " Air on the G String," Bach-Wilhelmj, the first note.



Finger-Wrist Movement

In the intermediate level, more specific attention is given to the finger-wrist movement, which implies control of the flexibility of the bowing fingers and wrist. This control is very necessary for small rapid strokes and for crossing the strings. In fact, it is used for every bow change in legato playing. Lack of control of the muscles involved in the finger-wrist movement is equivalent to having one's legs in a cast and trying to walk. The beginner who has learned to flex the proper joints and muscles in a most natural manner will achieve satisfactory results if he is taught to curve the thumb and the little finger,

not to spread the fingers on the bow, and to allow the wrist to flex up on the up stroke and down on the down stroke.

Allowing the student to play with a tight concave thumb on the bow is a disastrous error since this locks the large muscle in the wrist and also prevents any finger flexibility. While learning the finger-wrist movement, the student should be cautioned not to use it in an exaggerated manner. Such overuse of this movement may be compared to the German goosestep used instead of the gentle flexing of the knees used in ordinary walking.

The Vibrato

Two vital skills are developed at the intermediate level. One is the shift, and the other is the vibrato. The vibrato has had an interesting history. Its use was frowned upon in the 18th and early 19th century, deplored as a cheap, theatrical, maudlin trick. It was only to be used slightly on very long notes. In the later 19th and 20th century this was changed. Today the use of the constant vibrato, with taste and skill, is a norm. No mature performance is complete without it. It is the crowning glory of expressive tone.

There was a time years ago when the learning of the vibrato was shrouded in a haze of unscientific teaching. The student was told not to bother about it; it would come one day. " Just watch how teacher does it! " However, there is a definite approach to teaching the vibrato, and modern pedagogy uses definite methods to impart it to the student. Many scientific studies have been made of the vibrato, both from psychological as well as musical angles. Modern teaching has profited much from these studies.

In the opinion of many, the vibrato is a pulsing alteration of the pitch, created by a rolling of the fingertip back and forth between the center of true pitch to a point slightly below it. When the variation of pitch is made rapidly, it gives the effect of a single pitch. If it is performed too slowly, the ear detects the pitch changes — a decidedly unpleasant sound. Equally reprehensible is a vibrato which is too wide, causing too great a variation of pitch. Following are three types of vibrato.

1. The hand vibrato: The hand rocks from the wrist to produce the shake.
2. The arm vibrato: The shake is motivated by a movement of the whole forearm from the elbow.
3. The finger vibrato: The finger shakes from its root joint, with the hand as a whole taking a passive role.

Ivan Galamian and Carl Flesch both agree that all three types of violin vibrato should be used by the advanced student, since each creates a different tone color and style. The hand vibrato is usually the favored one to teach at first to the young violin or viola student. There may be some who hold different opinions about this. Cellists and bassists, of course, will be taught the arm vibrato.

Goals and Pitfalls in Teaching Vibrato, Double Stops, and Harmonics

The ideal beginners' vibrato is a constant, even shake. It requires a relaxed hand to perform it well. Any degree of squeezing of the neck of the instrument between the thumb and side of the hand will prevent the relaxation needed to produce a good vibrato. Taste and skill are needed to produce a vibrato which enhances the tone. If the oscillation is too wide, the pitch is affected. The musical effect of this error is a most distressing sound. If the oscillation is too small, too fast, or too slow, the effects are equally bad. The expressive vibrato, while it is constant and even, does vary its speed. The vibrato on the low strings and low positions is slower and wider. In the high positions the vibrato is faster and narrower. It can be seen from this that the vibrato is not a simple skill to master. Once controlled, however, it becomes one of the most expressive skills in producing tonal color and beauty.

Double stops can be introduced at an early level if kept simple. However, the formal study of double stops is usually undertaken in the intermediate level. This should include octaves, sixths, and thirds. It will be found that practicing double stops has a beneficial effect on both intonation and tone quality. The bow requires a sensitive balance to play evenly on two strings and the ear improves by tuning two notes with each other.

There are two types of harmonics — natural and artificial. Both types are part of intermediate level techniques. The natural harmonics are those played by touching the string very lightly in certain spots so that the string is vibrating on both sides of the finger. In depressing the string hard (as in ordinary stopping), the only section of the string sounding is that part between the finger and the bridge. The natural harmonics are produced when the single finger touches these divisions of the length of string; one half, one third, one fourth, and one fifth. The practice of harmonics is an aid to good intonation because of the discipline required to place the finger on a very precise point.

Artificial harmonics are produced at any point on the string by placing the first finger solidly on the string and touching the fourth finger lightly above it either at the interval of a fourth or a fifth. The interval of a fourth produces a harmonic two octaves above the first finger. The interval of a fifth produces a harmonic one octave and a fifth higher than the first finger. These are the commonly used types of harmonics. One more type of artificial harmonic is possible, but it is not used frequently. This is produced by placing the first finger solidly and touching the third finger lightly a major third above. The sound produced is two octaves and a major third above the first finger note. It should be noted that, in playing harmonics, the bow should be placed nearer the bridge than in normal playing.

Knowledge

In the intermediate level the student will have finished the advanced levels of the usual method books. These will acquaint him with the fundamentals of shifting and playing in positions. From here the student progresses to the following types of standard literature:

- Books of études such as those of Wohlfahrt and Kayser
- A scale book such as those of Hrimaly and Schradiek
- Books dealing specifically with finger exercises, double stops, and bowing skills, such as those of Sevcik and Schradiek
- Short pieces, chosen from good music, that exemplify various phases of performance skill and musicianship, such as tone, dexterity of fingers, bow style, and general interpretation. Also included should be the literature of the sonatas and concertos of the 17th- and 18th-century composers such as Bach, Handel, Corelli, Vivaldi, and the worthy student concertos of such 19th- and 20th-century composers as Seitz, Huber, and Rieding.
- Duets to develop the important field of ensemble performance, benefiting reading skill, the rhythmic sense, and general musicianship. There is a wealth of excellent literature from which to choose including such composers as Pleyel, Mazas, Viotti, Mozart, and Bartok.

The theoretical knowledge of this level should include further development of the following:

- The structure of major and minor scales
- All symbols and words used for dynamics
- All the generally used tempo marks

- For the violinist, the treble clef in addition to the alto clef so that he can play in the higher positions

Attitudes

The intermediate student stands on the threshold of maturing artistry. If he can properly be led across, there is a strong chance that he will continue his studies to ultimate mastery. As yet his techniques are relatively primitive and need further development so that he can express himself musically and approach the type of mature sounds he hears in the performance of artists. The " breakthrough " for further achievement comes when his growing control of a resonant and expressive tone plus a technical dexterity convince him that he can ultimately reach these advanced levels. He doesn't sound like Heifetz or Primrose yet — but he is on his way! Such growing skills are only possible if basic skills are properly established. Much frustration and discouragement comes from techniques inhibited by crippling muscular tensions due to faulty bow holds and posture. Much inspiration can result from having the student participate in a wide variety of musical experiences such as playing in small ensembles and orchestras, participation in contest-festivals, and solo appearances in recitals. He should also be exposed to the best of literature, both in his performance and in his passive listening. Nothing wins the young student to music like music itself! A student who has become esthetically involved in music in this manner is no longer a potential dropout.

Intermediate Level: Cello and Bass

The fundamentals utilized in teaching violin and viola can be applied to the cello and bass. However, a few items that differ from the treatment of the violin and viola will be listed here.

Skills

The same type of technique is used for both the cello and bass vibrato. This movement differs in many respects from the violin-viola vibrato. While the violin vibrato uses three different types of movement, the cello-bass uses but one. This movement is a rolling of the forearm with the wrist acting as a unit with the arm. A slightly wider vibrato is used when playing loud to balance the intensity and volume of tone and a slightly slower vibrato is used on lower pitches. The following two faults should be strictly avoided:

- A tense, fast vibrato made by quivering the hand
- The use of the violin type of vibrato made with a wrist movement. This type of vibrato is highly inappropriate for the cello since it is too narrow and cramped.

Cello and bass students should learn to play in four or five positions at the intermediate level.

During the shift the thumb remains opposite the second finger up to the fourth position. In slurred shifts, the bow should slow down just before the finger begins its slide to the new position. The note before the shift should be played strongly and with full length, so that the following shift is made unobstrusively.

The cello and bass player should learn the tenor clef for performance in the upper positions.

Artificial harmonics on the cello are created by using the thumb as the stopped note and touching the string lightly with the extended third finger at an interval of a fourth above. Occasionally, the first and fourth fingers are used in the same manner. This occurs, however, very seldom except at the " artist " level.

Knowledge

Study material for the cello on this level should include representative exercises by such composers as Deak, Dotzauer, Lee, Schroeder, Popper, and Grutzmacher.

Representative studies by Marcelli, Goetz, Bille, and Simandl should be employed at the intermediate level for the bass.

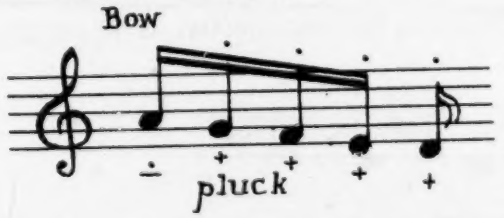
Advanced Level: Violin and Viola

Skills

The advanced level is the period of artistic realization. Technique becomes the means of musical expression. This implies a mastery of the skills of both right and left hand, enabling the performer to respond spontaneously with the appropriate technique needed to express the nuance and articulation of the music at hand. Good intonation and a good quality of tone production are taken for granted at this level. The goal now is the attainment of mature musical concepts and performance skills which make it possible to communicate music to the listener with meaning and pleasure. Take the factor of rhythm for example. In a mature concept, it is no longer the mechanized

pulse of the metronome as the beginner learns it. It now has the freedom of rubato. It is no longer confined to the arbitration of the bar sign. In the words of Carl Flesch, "The child must learn the function of the bar line; the artist is obliged to overcome it." As to the phrase, it is no longer a mere section, but comes to life with an understanding of its structure of points of tension and relaxation. The mature string player views the wonderful gamut of bow articulations at his command as the painter views his palette of infinite colors and he uses them to color music with an infinite variety of moods and styles. These are the goals the advanced student now strives to attain.

The advanced student should be able to command all types of bowing. These fall in three categories: legato bowings on the string played with separate strokes and with slurs; staccato strokes on the string, played with separate strokes and slurred; the off-string bowings which include spiccato and sautille, flying staccato, and ricochet.

The left hand should learn to play fast passages with dexterity as well as speed. It contributes to the beauty of the tone by supplying a controlled vibrato which is capable of changing its speed yet retaining its regularity. These changes are necessary to express varieties of mood and color. The speed of vibrato also changes when played in high positions or played on the low strings in the first position. Such control is expected of the advanced student. Left-hand pizzicato is also an advanced skill when it pertains to a rapid succession of notes plucked with successive fingers.

The advanced student is expected to learn all major and minor scales in three and four octaves in single notes; also scales in thirds, sixths, octaves, tenths, and artificial harmonics.

Knowledge

The advanced student should understand the varied styles of different periods of musical history: baroque, classical, romantic, and modern. He should become proficient in the routines of orchestral bowing skills. (See *Orchestral Bowings* by Elizabeth Green, listed in Resource Section.) He should become experienced in the greatest

discipline of all — the string quartet. Nothing develops musicianship as does chamber music with its exacting demands on interpretive values, cooperation among members of the group, and individual responsibility.

The literature of the advanced student should include the standard books of advanced studies and scales, advanced concert solo pieces, the unaccompanied sonatas of Bach, the accompanied sonatas of the classic, romantic, and modern periods, and the major concertos. He should be able to read at sight such literature as the chamber music and symphonies of Haydn, Mozart, and Beethoven. Such a skill in sightreading is the product of much participation in orchestra and small ensembles. This is to be heartily recommended since the saying goes that the only way to learn to read is to read. The more one does of this, the greater the skill attained. It is also recommended that the advanced student seek opportunities to play solos in public. Such performance gives poise and a sense of achievement.

Attitudes

The advanced student should have arrived at the point of independent self-criticism. He should learn to evaluate his performance in terms of quality of style and interpretation. He should be able to approach a new composition by himself and make the important decisions needed to perform it in correct tempo, style, and general concept. Such independence indicates the degree of maturity the student has attained. Nothing has contributed to this phase of musical progress as much as the modern tape recorder and television. While television equipment is still expensive for home use, tape recorders are reasonable enough to be part of the study equipment of every musician. Hearing oneself on a tape is an invaluable aid to critical objectivity. It is a prime way to correct faults of every musical nature.

Advanced Level: Cello and Bass

Fundamentals as listed in the violin-viola section also apply to the cello and bass. Items which are unique to the cello and bass are listed.

Skills

The thumb positions on cello and bass begin after the seventh position, which is located by stopping the string one octave above the

open string. The fingering then becomes like violin-viola fingering. Bassists and cellists use the third finger rather than the fourth finger in the thumb positions, since the fourth finger can no longer reach the strings.

The advanced cellist and bass player should learn all the major and minor scales. The ceilist plays four octave scales for those scales beginning on the C string and three octave scales for those beginning on the G string.

Knowledge

Representative studies for the cellist could be selected from the following composers: Duport, Lee, Merk, Piatti, Popper, and Servais.

Some of the representative studies for bass at this level are the work of the following composers: Bille, Fahsbender, Hrabe, Simandl, and Sturm.

IV. Resource Materials for Teachers

Books and Pamphlets: String Pedagogy and References

Applebaum, Samuel. *University string builder, the teacher's manual.* Rockville Centre, N.Y. Belwin. 1968.

The teacher's manual of a heterogeneous string method intended for college use. It has many fine photographs for teaching the techniques of all four of the string instruments. The directions are explicit and authoritative.

Bachman, Alberto. *Encyclopedia of the violin.* New York. De Capo. 1967.

A reprint of the most comprehensive encyclopedia of violin knowledge published.

Berkley, Harold. *Modern technic of violin bowing.* New York. G. Schirmer. 1941.

A well-illustrated manual on bowing techniques as they are used and taught today.

Cook, Clifford. *String teaching and some related topics.* Urbana, Ill. American String Teachers Association. 1960.

Advice on string teaching written with great insight and humor.

Edwards, A. C. *String ensemble method — for teacher education.* Dubuque, Iowa. W. C. Brown Co. 1959.

A well-illustrated method in score form to aid the student in grasping a composite view of all string instruments.

Farish, M. K. *String music in print.* New York. R. R. Bowker. 1965.

——— *String music in print: supplement.* New York. R. R. Bowker. 1968.

A comprehensive list of string music and literature of every type, brought up to date with a 1968 supplement.

Flesch, Carl. *The art of violin playing.* New York. C. Fischer.

——— *Artistic realization.* New York. Carl Fischer. 1939.

In these two books, a great teacher examines and analyzes every aspect of violin study and artist performance, considering not only physical approaches but also mental and emotional attitudes.

Galamian, Ivan. *Principles of violin playing and teaching.* Englewood Cliffs, N.J. Prentice-Hall. 1962.

A well-illustrated teachers' manual of violin pedagogy. Outlines procedures useful to all levels of progress from the beginner to the artist.

Green, E. A. H. *Orchestral bowings.* Ann Arbor, Mich. Ann Arbor Publishers. 1949.

A comprehensive study of orchestral bowings and routines. Tells how and when to use the various bowing styles and articulations; many samples included.

——— *Teaching string instruments in classes.* Englewood Cliffs, N.J. Prentice-Hall. 1966.

A fully detailed manual on teaching string instruments, well illustrated. Includes step-by-step instructions on the most important lessons given to a beginner (the first 10).

Grodner, Murray. *Comprehensive catalog of the literature of the double bass.* Bloomington, Ind. Indiana Univ. Press. 1964.

The most complete listing of bass literature in print.

Havas, Kato. *A new approach to violin playing.* London. Bosworth. 1961.

——— *The 12 lesson course.* London. Bosworth. 1964.

A new approach to violin study dealing with a method of playing with relaxed muscular control. The 12-lesson course contains the directions and materials used in teaching the new method.

Henkle, Ted. *The string teacher's handbook.* New York. C. Fischer. 1968.

A valuable handbook on teaching all string instruments in the elementary stages.

Holmes, Markwood, & Hill, Frank. "The selection and care of a string instrument." *Why have a string program?* Washington, D.C. M.E.N.C. 1957. pa.

A pamphlet containing a rationalization of the place of strings in an educational program and information on selection and care of a string instrument. One of a series of reports issued by the M.E.N.C. String Instruction Committee.

Kendall, J. D. *Talent education. The teaching method of Mr. Schinichi Suzuki.* Washington, D.C. M.E.N.C. 1960. pa.

A pamphlet describing the teaching methods and philosophies of the Japanese educator, Suzuki, written by the first American to have studied the system in Japan.

Krolick, E. J. *Basic principles of double bass playing.* Washington, D.C. M.E.N.C. 1957. pa.

A pamphlet on teaching the elements of bass playing.

Neumann, Frederick. *Violin left hand technic.* Urbana, Ill. American String Teachers' Association. 1970.

This material first appeared in the ASTA Journal in 1953–63. A learned and complete study of violin technique.

Potter, Louis. *The art of cello playing.* Evanston, Ill. Summy-Birchard. 1964.

A complete teaching manual and method for the cello containing not only precise directions on how and what to teach, but also the material used to develop each skill, with duets and pieces. Well illustrated. Also has valuable graded lists of solo and ensemble materials and bibliography on cello.

Rolland, Paul. *Basic principles of violin playing.* Washington, D.C. M.E.N.C. 1959.

A booklet on teaching the elements of violin playing, authorized by M.E.N.C., written by a well-known artist and teacher.

——— *Prelude to string playing.* New York. Boosey and Hawks. 1970.

A master teacher outlines his many unique devices to help overcome crippling tensions in playing string instruments. These are the findings of his String Research Project subsidized by a government grant.

Roth, H., Muller, F., & Klotman, R. *Sound.* Cleveland, O. Scherl & Roth. n.d. pa.

A pamphlet containing an article on a tonal approach to string instruction, another on instrument selection and also the statistics on a minimum standard for string instruments used in public schools according to the findings of Music Educators National Conference.

Segrave-Berman. *The ASTA dictionary of bowing terms.* Urbana, Ill. American String Teachers Association. 1968.

Stanton, D. H. *The string bass.* Evanston, Ill. Instrumentalist Co. 1965.

A most complete manual of information on the double bass; well illustrated. Contains teaching directions of elements of bass playing, care and repair, construction, lists of teaching material, solos and ensembles, bibliography of books on the bass, and a list of bass makers. A valuable book for bass teachers.

Stoeving, Paul. *The mastery of the bow and bowing subleties.* New York. C. Fischer. 1920.

A very comprehensive and analytical study of all types of violin bowing written by a master teacher.

The University of the State of New York, The State Education Department. *Major new developments in elementary school music education.* 1969.

Includes a basic synopsis of the Suzuki Talent Education Program and its use in the Bedford, N.Y. public schools. Includes an excellent bibliography of Suzuki principles.

Wassell, A. W. & Haderer, W. L. *Bibliography for string teachers.* Washington, D.C. M.E.N.C. 1957. pa.

A pamphlet issued by the M.E.N.C. String Instruction Committee. Books, pamphlets, magazine articles on history of string teaching, promotion of strings, teaching, and other matters.

Books and Pamphlets: Care, Repair, and Construction of String Instruments

Alton, Robert. *Violin and cello building and repairing.* London. William Reeves. 1946.

A modern manual on construction and repair of violins and cellos.

Bachman, Alberto. *Encyclopedia of the violin.* New York. De Capo. Reprinted. 1967.

Contains much information on construction, care, and repair of violins; also lists of violin and bow makers.

Heron-Allen, Edward. *Violin making.* London. Ward Locke. 1885. Available from Carl Fischer, New York, N.Y.

A complete book of directions on string instrument making and repairing.

Holmes, Markwood, & Hill, Frank. "The selection and care of a string instrument." *Why have a string program?* Washington, D.C. M.E.N.C. 1957. pa.

A pamphlet containing a rationalization of the place of strings in an educational program and information on selection and care of a string instrument. One of a series of reports issued by the M.E.N.C. String Instruction Committee.

Lewis, William, & Son. *Proper care and maintenance of string instruments.* Chicago, William Lewis & Son. (Leaflet)

A valuable amount of good advice for students on care of instruments.

Scherl & Roth. *You fix them.* Cleveland, O. Scherl & Roth.

A manual on string repair.

Stanton, D. H. *The string bass.* Evanston, Ill. Instrumentalist Co. 1965.

Contains several chapters on construction, repair, and care of the double bass.

Films and Filmstrips on Care, Repair, and Construction

Scherl & Roth. *Art of bow making.* Color filmstrips. Cleveland, O.

Comes with tape recording. Materials loaned free by Scherl & Roth.

——— *Violin making in Europe* and *Violin adjusting in the U.S.A.* Color filmstrips with tape recording. Cleveland, O. Scherl & Roth.
Valuable information about string instrument adjusting. (Free loan.)

Films on String Pedagogy

Applebaum, Samuel. *The violin.* Church and Sarig. Madison, Wis. Univ. of Wisconsin. 1968. Film 1, 30 min. Film 2, 30 min. 16 mm, B&W.
Two-film presentation with a teacher's manual. Film 1 deals with elements of holding the violin and bow; film 2 presents the various bowing strokes.

Casals' master class series. New York. McGraw-Hill Films. 16 mm, B&W. 25 films, approx. 27 min. each. 1970.

Heifetz master class series. New York. McGraw-Hill Films. 16 mm, B & W. 8 films, approx. 27 min. each. 1970.

The teaching of Kato Havas. Bryn Mawr, Pa. Theodore Presser Co. 1970.
Demonstrating principles of violin teaching with adult pupils. Recommended for adults. 24 min. B&W.

University of Illinois Research Project Films *

The teaching of action in string playing, by Paul Rolland. Bryn Mawr, Pa. Theodore Presser Co. Color. 1970.
In this series of seventeen 16 mm color films, wallcharts, and manuals, artists, teachers, and students of various ages demonstrate principles and techniques of string playing, with emphasis on the violin.

Young Violinists in Action (F-R)

Children of the Urbana-Champaign Project class perform a program of new compositions by Stanley Fletcher, Alan Shulman, Halsey Stevens, and Richard Wernick as a final report after 2½ years of study. Explanations are by the project director, Paul Rolland. The film illustrates the main principles of the project and documents the achievement of project students. It is recommended for teachers and pupils and is also effective for recruitment and parent demonstrations. Duration: 23 minutes.

* Supported by U.S. Office of Education grant H-288. (Letters in parentheses are code letters identifying the film in brief form.)

Principles of Motion in String Playing (P-M)

The principles of free and efficient motion are discussed and demonstrated by Paul Rolland, grade school, high school, and college students. Similarities of motion patterns in string playing and in sports are analyzed and demonstrated. Duration: 21 minutes.

Rhythm Training (R-T)

Kindergarten and grade school students demonstrate how the fundamentals of rhythm can be taught without the instrument and how the same principles can be incorporated into string teaching. Duration: 10 minutes.

Establishing the Violin Hold (L-1)

Grade school children demonstrate the basic motions leading to a good violin hold. Left-hand pizzicato, early shifting movements, and games are used to establish correct position, to give an immediate concept of left arm placement in the low, middle, and high positions of the fingerboard, and to avoid stiffness that results when the beginner is limited to the first position. Correct and incorrect forms are demonstrated. Duration: Part I — 8 minutes; Part II — 7 minutes.

Holding the Violin Bow (R-1) and Violin Playing at the Middle of the Bow (R-2)

Grade school children demonstrate actions used for the establishment of a correct bow hold. Short strokes at the middle of the bow, tone beginnings and releases, and string crossing motions are explained and demonstrated. Duration: R-1 — 8½ minutes; R-2 — 8½ minutes.

Principles of Left-Hand Finger Action (P-L)

Principles of left-hand placement and finger action are explained and demonstrated by artists and students. Concert and recording artists, Robert Gerle, Leonard Sorkin, and Paul Rolland, demonstrate the principles of left-hand balance, angle, elevation, and thumb placement in a variety of action shots. Suitable for both young and mature audiences. Duration: 12 minutes.

Establishing Left Hand and Finger Placement (L-2)

From the start the student is made aware of the octave relationship of the open string and third finger (cello 0-4). The " Octave Game " and pieces based on the 0-3 finger pattern encourages good left-hand position and intonation. Duration: 8 minutes.

Extending the Bow Stroke (R-4)

In Part I, grade school students demonstrate the playing of short strokes at the tip and at the frog. Bow transfers are practiced under teaching supervision.

In Part II, grade school, high school, and college students demonstrate the playing of long bow strokes in groups and individually. Freedom of movement, flexibility, and total body action are emphasized, demonstrated, and explained. Part of the *Vivaldi G Major Concerto* is performed by a college group. Duration: Part I — 8 minutes; Part II — 11 minutes.

Developing Finger Movement (L-3) and Basic Shifting Movements (L-4)

The correct placement and action of fingers are demonstrated by grade school and junior high school students. Vertical and horizontal finger action and finger movement across the string are demonstrated and explained.

Grade school and junior high school students demonstrate basic shifting movements. The left hand is kept supple from the beginning by the use of shifting movements between the low, middle, and high positions. Simple and compound shifts are demonstrated and explained. Duration: L-3 — 10 minutes; L-4 — 10½ minutes.

Bouncing the Bow (R-3) and Martelé and Staccato (R-5)

Grade school and junior high school students demonstrate how spiccato playing is first introduced and how to avoid stiffness in playing bouncing bows.

Grade school and junior high school students demonstrate how to attack and release the string in martelé and staccato strokes. Duration: R-3 — 6½ minutes; R-5 — 7 minutes.

Developing Flexibility (R-6)

Grade school and junior high school students demonstrate exercises for the development of flexible bowing and " followthrough " motions between bow strokes and after releases. Duration: 10 minutes.

First Steps in Vibrato Teaching (L-5)

The vibrato movement is demonstrated and explained in Part I. In Part II students of various age levels demonstrate techniques of vibrato instruction. The vibrato motion is analyzed, and exercises are presented for its development. Duration: Part I — 6 minutes; Part II — 13 minutes.

Sustained and Détaché Bowing (R-7)

Part I demonstrates how slow bow strokes and a firm tone can be developed. The actual vibrations of the string in slow motion are shown in one scene. The development of bow pressure and correct bow distribution are demonstrated. In Part II, the all important détaché bowing and its variants are explained and demonstrated. The performers are of all age levels. Duration: Part I — 8 minutes; Part II — 11 minutes.

Remedial Teaching (R)

A group of junior high school students from the University of Illinois Summer Youth Music Camp are shown before and after 8 days of instruction. Principles of violin fundamentals and remedial instruction are demonstrated and explained. Particularly suitable for junior high school pupils. Duration: 20 minutes.

Records on String Pedagogy

Applebaum, Samuel. *Clinician Series.* Golden Crest.

1. The string bowings. 2 albums. CR102D
2. How to develop a beautiful vibrato. CR102
3. How to raise the standard of string class teaching. CR1022
4. How to develop a basic left-hand technic. CR1024
5. How to develop a beautiful tone. CR1025
6. How to lose your fear of the upper positions. CR1026
7. Sixteen basic principles of general musicianship. CR1027
   Step by step directions in how to teach the elements of violin playing. Mono.

Karr, Gary. The bass. *Clinician Series.* Golden Crest, CR1011
A virtuoso player tells how to teach the elements of bass playing.

Muller, Frederick. String clinician. *Clinician Series.* Golden Crest, CR1006
A 12-inch record, 33⅓, teaching the elements of violin playing. Mono.

Teaching partner for tuning the violin. New York. Edward B. Marks. 1965.
A 6-inch record, 33⅓, teaching how to tune the violin step by step.

V. Instructional Materials for Teaching String Instruments

VIOLIN

Music Texts (Instruction Books)

Alshin. *The sound of the violin.* Book I. With recordings. Frank Music.

Applebaum. *Second and fourth positions.* Belwin.

——— *String builder.* 5 vols. Belwin.

——— *Third and fifth positions.* Belwin.

——— *University string builder.* Belwin.

Best. *All strings.* Varitone.

Bornoff. *Finger patterns.* C. Fischer.

——— *Patterns in positions.* C. Fischer.

Dolflein. *Violin method.* 4 vols. B. Schott.

Flor. *Violin mastery.* Schmitt, Hall & McCreary.

Herfurth. *A tune a day.* 3 vols. Boston Music Co.

Herman. *Bow and strings.* 3 vols. Belwin.

Isaac. *String class method.* 2 vols. Cole.

Kafka. *Building strings together.* Henry Adler.

Kendall. *Listen and play.* Book and records. Summy-Birchard.

Matesky & Womack. *Learning to play a stringed instrument.* Prentice-Hall.

Muller & Rusch. *String method.* 5 vols. Kjos.

Pernecky. *Growing with strings.* Cole.

Suzuki. *Suzuki violin school.* 10 vols. Zen-On. Summy-Birchard, Agents.

Waller. *Vibrato method for strings.* Kjos.

——— *String class method.* 2 vols. Kjos.

Whistler. *Introducing the positions.* Rubank.

Supplementary Materials (Exercises and Studies)

Grading
E — Easy
I — Intermediate
A — Advanced

Applebaum. *Early studies.* Belwin.

——— *First position études.* Belwin. E.

——— *Orchestral bowing studies.* Belwin. I.

Dancla. *15 Studies, op. 68.* G. Schirmer. E-I.

Dont. *20 Progressive exercises, op. 38.* G. Schirmer. I-A.

——— *24 Exercises preparatory to Kreutzer.* Rode. op. 37. C. Fischer. I-A.

Dounis. *Fundamental technical studies for the young.* Theo. Presser. E-I.

Fiorillo. *36 Etudes.* G. Schirmer. A.

Flesch. *Scale system.* G. Schirmer. A.

Gavines. *24 Matinees.* C. Fischer. A.

Kayser. *36 Etudes for violin, op. 20.* C. Fischer. I-A.

Koch. *Fiddle finger forms.* Boston. E.

Kreutzer. *42 Studies.* G. Schirmer. A.

Laoureux. *A practical method for violin.* 4 vols. G. Schirmer. E-A.

——— *Supplement to part 1.* G. Schirmer. E-I.

Levenson. *The first scale studies.* G. Schirmer. E-I.

Locatelli. *The art of the violin.* Ricordi. A.

Mazas. *Studies, op. 36.* Book 1. C. Fischer. I.

Paganini. *Caprices.* C. Fischer. A.

Palmer & Best. *Easy studies in the 3d position.* Oxford. I.

Rode & Capet. *24 Caprices.* G. Ricordi. A.

Sevcik. *Forty easy variations (bowing) op. 3.* Belwin. I-A.

——— **Applebaum.** *Developing shifting skills without various bowing styles.* Belwin. I-A.

———*Developing skills in the positions.* Belwin. I-A.

Sitt. *Studies, op. 32, Book 2.* C. Fischer. I.

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Trott. *Melodious double stops.* G. Schirmer. I-A.

Twinn. *Scales and arpeggios.* Mills. E-I.

Whistler & Hummell. *Preparing for Kreutzer.* Rubank. I.

——— *Elementary scales and bowings.* Rubank. E-I.

Wohlfahrt. *Easiest elementary method, op. 38.* G. Schirmer. E-I.

——— **Aiquoni.** *60 Studies.* (From op. 45, ED, and 74) 2 vols. C. Fischer. E-I.

Books and Guides (For Teachers and Advanced Pupils)

Applebaum, Samuel. *With the artists.* New York. Markert. 1955.

Auer, Leopold. *Violin playing as I teach it.* Philadelphia. Lippincott. 1960.

Babitz, Sol. *A problem of rhythm in baroque music.* Urbana, Ill. A.S.T.A.

Bachman, Alberto. *An encyclopedia of the violin.* New York. Da Capo Press. 1925.

Berkley, Harold. *The modern technique of violin bowing.* New York. G. Schirmer. 1941.

Boyden, D. D. *History of violin playing.* Fair Lawn, N.J. Oxford.

Cook, Clifford. *String teaching and some related topics.* Urbana, Ill. A.S.T.A. 1957

Flesch, Carl. *The art of violin playing.* Vols. 1 & 2. New York. C. Fischer. 1939.

Galamian, Ivan. *Principles of violin playing and teaching.* Englewood Cliffs, N.J. Prentice-Hall. 1962.

Geminiani, Francesco. *The art of playing on the violin.* Fair Lawn, N.J. Oxford.

Green, Elizabeth. *Teaching string instruments in classes.* Englewood Cliffs, N.J. Prentice-Hall. 1966.

Hankle, Ted. *The string teacher's handbook.* New York. C. Fischer. 1968.

Havas, Kato. *A new approach to violin playing.* London. Bosworth. 1961.

——— *The twelve lesson course.* London. Bosworth. 1964.

Hodgson, Percival. *Motion study and violin bowing.* Urbana, Ill. A.S.T.A. 1958.

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Kendall, John. *Talent Education and Suzuki.* Washington, D.C. M.E.N.C. 1965.

——— **Suzuki, Shinichi, & Goldberg, Milton.** *Today's youth and the violin.* Lincoln, Ill. William Lewis & Son. pa.

——— *Talent education — the violin teaching methods of Mr. Shinichi Suzuki.* Alton, Ill. Southern Illinois Univ. 1959.

Matesky, Ralph, & Rusch, Ralph. *Playing and teaching string instruments.* Englewood Cliffs, N.J. Prentice-Hall. 1963.

Mozart, Leopold. *A treatise on the fundamental principles of violin playing.* Fair Lawn, N. J. Oxford. 1959.

Normann, T. F. *Instrumental music in the public schools.* (chapter on strings) Bryn Mawr, Pa. Presser. n.d.

Norton, D. H. *The art of string quartet playing.* New York. Simon and Schuster. 1962.

Reuning, Sanford. *A teaching guide to the Suzuki violin method.* (in preparation)

Rolland, Paul. *Basic principles of violin playing.* Washington, D.C. M.E.N.C. 1957.

Rosenberg, Fred. *The violin — the technic of relaxation and power.* Cleveland, O. Powell Pub. n.d.

Tertis, Lionel. *Beauty of tone in string playing.* Fair Lawn, N.J. Oxford. 1946.

Underwood, Rex. *Know your fingerboard.* Portland, Ore. Manuflex Pub. n.d.

Waller, Gilbert, & others. *String instruction program No. 1.* Washington, D.C. M.E.N.C. 1957.

VIOLA

Music Texts (Instruction Books)

Note: Due to the scarcity of specifically designed methods for viola, many teachers use viola books from one of the many popular heterogeneous methods; i.e., Applebaum, *String builder;* Waller, *String method;* Herfurth, *A tune a day;* and others. Some of these are included below. Others may be found listed under violin.

Applebaum. *String builder.* 5 vols. Belwin.

——— *University string builder.* Belwin.

Best. *All strings.* Varitone, Inc.

Bornoff. *Finger patterns.* Gordon V. Thompson.

——— *Patterns in position.* Gordon V. Thompson.

Brown. *Bow craft viola tutor.* Mills.

Bruni. *Viola method.* Ricordi, Schott, & Leeds.

Carse. *Viola school.* 5 vols. Galaxy.

Cheyette-Saltzman. *Beginning string musicianship; intermediate string musicianship.* Bourne.

Dilmore. *Breeze easy method for strings.* 2 vols. M.P.H.C.

Feldman. *Unison string class method.* Pro-Art.

Gardner. *Viola method.* Boston Music Co.

Green. *Hohman for the string class.* C. Fischer.

Herfurth. *A tune a day.* 3 vols. Boston Music Co.

Herman. *Bow and strings.* 3 vols. Belwin.

Iotti-Laoureaux. *Practical method for viola.* G. Schirmer.

Isaac. *String class method.* 2 vols. Kjos.

Klotman. *Action with strings.* Southern Texas.

Knechtel. *Universal's fundamental method.* Universal.

Martin. *Funway to fiddleton.* Seraphic Press.

Matesky-Ardelle. *Learning to play a string instrument.* Prentice-Hall.

Michelini. *Scuola della viola.* Ricordi.

Moehlmaṅ-Skornica. *Instrumental course for strings.* Boosey-Hawkes.

Muller-Rusch. *String method.* 5 vols. Kjos.

Pernecky. *Growing with strings.* Cole.

Rubank. *Elementary method.* Rubank.

Sitt. *Practical viola method.* C. Fischer.

Skornika-Moehlmann. *Instrumental course for strings.* Boosey-Hawkes.

Sopkin. *Music educator's basic method.* C. Fischer.

Vashaw-Smith. *Work and play string method.* Presser.

Volmer. *Bratschenschule.* Schott.

Waller. *String class method.* 2 vols. Kjos.

Ward. *Elementary method; intermediate method.* Rubank.

Supplementary Materials (Exercises and Studies)

Applebaum. *Early études.* Belwin. E.

——— *First position études.* Belwin. E.

——— *Orchestra bowing études.* Belwin. E.

Berger. *Basic viola technic.* Leeds. I-A.

Blumenstengel. *24 Studies, op. 33.* International. A.

Bruni-Schulz. *Twenty-five studies.* International. A.

Campagnoli. *Forty-one caprices, op. 22.* G. Schirmer. International. A.

Dolejsi. *Modern viola technique.* Univ. of Chicago Press. I-A.

Dont-Svecenski. *Twenty progressive studies.* G. Schirmer. A.

Fiorillo. *Thirty-one selected studies.* International. A.

Fischer. *Selected studies and études.* Belwin. I-A.

——— *Violin and viola calisthenics.* Belwin.

Flesch-Karman. *Scale system.* C. Fischer. A.

Fuchs. *Twelve caprices.* G. Schirmer. A.

Hermann. *Concert studies, op. 18.* International. A.

——— *Fifteen studies, op. 87.* International. E-I.

Hoffmeister. *Twelve studies.* International. I-A.

Hofmann. *First studies, op. 89.* International. E.

Kayser-Vieland. *Thirty-six studies, op. 20.* International. I-A.

Kinsey. *Easy progressive studies for viola.* Mills Music Co. E-I.

Kreutzer. *Forty-two studies.* G. Schirmer. Ricordi. International. A.

Kreuz. *Selected studies, Bks. 2 & 3.* Broude Bros. A.

Lifschey. *Daily technical studies.* G. Schirmer. I-A.

——— *Double stop studies for the viola.* G. Schirmer. A.

——— *Scale & arpeggio studies, Bk. 1.* G. Schirmer. E-I.

Lukacs. *Exercises in change of position.* Boosey-Hawkes.

Mazas. *Studies, op. 36.* International. I-A.

Primrose. *The art and practice of scale playing.* Mills. I-A.

Rode. *Twenty-four caprices.* G. Schirmer. International. A.

Rovelli. *Twelve caprices, op. 3, 5.* International. A.

Schradieck. *School of viola technique, Bk. 1.* G. Schirmer. International. I-A.

Sevcik-Applebaum. *Developing shifting skills with various bowing style.* Belwin. I-A.

——— *Developing skills in the positions.* Belwin. I-A.

Sevcik-Aranoff. *Changes of position.* Elkan-Vogel. E-I.

——— *Exercises in first position, op. 1.* Elkan-Vogel. E-I.

Sevcik-Lifschey. *Selected studies, op. 1 & 2.* G. Schirmer. I-A.

Sevcik-Tertis. *School of bowing technic, op. 2.* Bosworth-Belwin. I-A.

Vieland. *Orchestral excerpts.* International. A.

Whistler. *Elementary scales and bowings.* Rubank. E-I.

——— *Essential studies.* Rubank. E-I.

——— *From violin to viola.* Rubank. I.

——— *Introducing the positions.* 2 vols. Rubank. I.

Wohlfahrt, Isaac, & Lewis. *Foundation studies.* C. Fischer. I.

——— *Thirty studies in first position.* C. Fischer. E-I.

——— *Thirty studies in third position.* C. Fischer. I.

Books and Guides (For Teachers and Advanced Pupils)

Note: There are many reference works written for the violin which are directly applicable to the viola. A partial listing of the more important references follow. More can be found in the violin section of this bibliography.

Berkley, H. H. *The modern technique of violin bowing.* New York. G. Schirmer. 1941.

Dolejsi, Robert. *Modern viola technic.* Chicago. Univ. of Chicago Press. 1964.

Flesch, Carl. *Art of violin playing.* 2 vols. New York. C. Fischer. 1939.

Galamian, Ivan. *Principles of violin playing and teaching.* Englewood Cliffs, N.J. Prentice-Hall. 1963.

Green, Elizabeth. *Orchestral bowing.* Ann Arbor, Mich. Edwards Letter Shop. 1949.

Gruenberg, Eugene. *Violin teaching and study.* New York. C. Fischer. 1919.

Kendall, John, Suzuki, Shinichi, & Goldberg, Milton. *Today's youth and the violin.* Lincolnwood, Ill. Wm. Lewis & Son. pa. n.d.

Normann, T. F. *Instrumental music in public schools.* Chapter on the string instruments. Bryn Mawr, Pa. Ditson, Theodore Presser. 1941.

Pernecky, Jack. *Basic guide to violin playing.* M. M. Cole. Chicago. 1963.

Rolland, Paul. *Basic principles of violin playing.* Washington, D.C. M.E.N.C. 1957.

CELLO

Music Texts (Instruction Books)

Alexanian. *L'Enseignement du violoncelle.* Mathot. A.

Alwin. *Cello tutor for beginners.* Augener. E.

Angus. *From fingers to bow.* C. Fischer. E.

Applebaum. *String builder.* 5 vols. Belwin.

——— *University string builder.* Belwin.

Bazelaire. *Technique du violoncelle.* 4 vols. Leduc. E-A.

Becker. *Finger — und bogen — übungen.* Scott. I-E.

Bergh. *String positions.* Summy-Birchard. I.

Best. *All strings.* Varitone. E-I.

Bornoff. *Finger patterns.* Gordon Thompson. E-I.

——— *Patterns in positions.* Gordon Thompson. I.

Bornschein. *First lessons on the cello.* Oliver Ditson. E.

Davidov. *Cello method.* Peters. I.

Déak. *Modern method for violoncello.* Elkan-Vogel. E-A.

Dotzauer. *Method.* 2 vols. New York. C. Fisher. Vol. 1-E. Vol. 2-I.

Fischel & Bennett. *Gamble's class method for strings.* 3 vols. Music Publishers Holding Corp. E-I.

Herfurth. *Tune a day.* 2 vols. Boston. E.

Hermann. *Bow and strings.* 3 vols. Belwin. E-I.

Isaac. *String class method.* M. M. Cole. E-I.

Knechtel. *Universal's fundamental method.* Universal. E-I.

Krane. *Method for cello.* Jack Spratt. E.

Kummer. *Method, op. 60.* G. Schirmer. I-A.

Langey. *Tutor.* C. Fischer. E-I.

Lee. *Method, op. 30.* C. Fischer. E-A.

Malkin. *Fundamental method.* C. Fischer. E-A.

Marcelli. *Basic method.* 2 vols. C. Fischer. E-A.

Matz. *The first years of violoncello.* Arvins-Eisinger. E-A.

Pernecky. *Growing with strings.* Chicago. M. M. Cole.

Piatti. *Method.* 3 vols. Augener. E-A.

Potter. *Art of cello playing.* Summy-Birchard. E-A.

Preston. *Direct approach to the higher positions for string classes.* Belwin. I-A.

Schröeder. *Method.* 3 vols. C. Fischer. E-A.

Skornicka & Moehlmann. *Instrumental course for strings.* Boosey-Hawkes. E-I.

Waller. *String class method.* 2 vols. Kjos. E-I.

——— *Vibrato method.* Kjos. I.

Ward. *Rubank elementary method.* Rubank. E.

——— *Rubank intermediate method.* Rubank. I.

Werner. *Practical method, op. 12,* and *Art of bowing, op. 43.* 1 vol. C. Fischer. E-A.

Whistler. *Introducing the positions.* 2 vols. Rubank. I.

Supplementary Materials (Exercises and Studies)

Applebaum. *Early études.* Belwin. E.

——— *First position études.* Belwin. E.

——— *Orchestral bowing études.* Belwin. I.

Bast. *Scale and arpeggio manual.* Augener. E-A.

Benoy & Sutton. *Introduction to thumb position.* Oxford. I.

Berka. *Thumb position exercises.* Artia. I-A.

Cossman. *Cello studies.* Schott. A.

——— *Concert studies, op. 10.* International. A.

——— *Studies for the development of agility.* International. I-A.

Crepax. *Difficult passages and solos from important modern Italian operas and symphonies.* Ricordi. A.

Dotzauer. *62 Exercises.* 2 vols. C. Fischer. E-A.

——— *113 Studies.* 4 vols. International. E-A.

Duport. *21 Etudes.* 2 vols. G. Schirmer. A.

Epperson. *Manual of essential cello techniques.* Fox. I-A.

Franchomme. *12 Caprices, op. 7.* International. A.

——— *12 Etudes, op. 35.* International. A.

Freed. *Cello adventures, Book 1.* Pioneer Music Press. E.

Grümmer. *Daily exercises for advanced cellists.* Simrock. A.

Grützmacher. *Daily exercises, op. 67.* G. Schirmer. I-A

——— *12 Etudes, op. 72.* 2 vols. Peters. I-A.

——— *Orchestral studies.* 2 vols. Breitkopf und Härtel. A.

——— *Technology of cello playing, op. 38.* 2 vols. International. I-A.

Janowsky. *Cello note speller.* Belwin. E.

Jaus. *101 Rhythmic rest patterns.* Belwin. E-I.

Jullien. *2 Cadenzas for the Haydn concerto in D major.* Editions. Max Eschig. A.

Kabalevsky. *Major-minor études for cello solo, op. 67.* Leeds. A.

Kiesling. *Orchestral studies from the works of Wagner.* Breitkopf und Härtel. A.

Klengel. *Daily exercises.* 3 vols. Breitkopf und Härtel. I-A.

——— *Technical studies.* 4 vols. Breitkopf und Härtel. I-A.

Krane. *New school of cello studies, (first position).* 2 Bks. Jack Spratt. E.

Kvarda. *Orchestra studies from the works of R. Strauss.* 2 vols. Peters. A.

Laenglin. *Studies for violoncello.* 12 solo passages from cantatas and orchestra works. Peters. A.

Lebell. *42 Studies and exercises.* 2 vols. Mills. E-A.

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